

circulatory disturbance was found on the first day of the week, on Monday, with a gradually decreasing tendency towards the end of the week. Examination of variation according to age groups showed a significant difference only in case of TIA with consideration to daily variation. **CONCLUSIONS:** The decrease is higher from Friday to Sunday. In summary, the results of our study show that the incidence of an acute myocardial infarction and a transient ischemic attack shows characteristic variation with regard to seasons and the days of the week.

PCV24

DAILY ALCOHOL CONSUMPTION AND RACE/ETHNICITY: THEIR RELATIONSHIP TO STROKE OR CORONARY ARTERY DISEASE IN THE US ADULT POPULATION

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OBJECTIVES: Atherosclerotic disease is the leading cause of mortality in the US. Modifiable and non-modifiable risk factors need to be studied simultaneously for stroke and coronary artery disease (CAD). We examined the association between daily alcohol consumption, race/ethnicity, stroke and CAD. **METHODS:** We used the 2005 Behavioral Risk Factor Surveillance System (BRFSS), a nationally representative cross-sectional survey. We performed Chi-square tests to determine associations between daily alcohol consumption (<1, 1–2, and >2 drinks) and race/ethnicity (Black, Asian, Native Hawaiian/Pacific Islander, American Indian/Alaskan Native, White, Hispanic, Multiracial, and Other) with stroke and CAD. Identifying daily alcohol consumption and race/ethnicity as independent variables and stroke or CAD as dependent variables, we assessed the relationships in multivariate logistic regression after controlling for modifiable and non-modifiable risk factors. Modifiable risk factors included hypertension, hyperlipidemia, diabetes, body mass index, exercise, daily fruit/vegetable consumption, smoking status, education, and income. Non-modifiable risk factors included gender and age. **RESULTS:** We analyzed 269,554 cases. Compared to those having >2 drinks/day, individuals who reported <1 drink/day were found to have 1.36 [95%CI = 1.14–1.63] greater odds of stroke [$p = 0.001$] and 1.33 [95%CI = 1.17–1.51] greater odds of CAD [$p < 0.0001$]. For stroke and CAD, American Indians/Alaskan Natives had 1.65 [95%CI = 1.41–1.94] and 1.41 [95%CI = 1.24–1.62] greater odds, respectively, than Whites [$p < 0.0001$ each]. Hispanics had 0.70 [95%CI = 0.62–0.79] lower odds of stroke [$p < 0.0001$] while Blacks had 1.18 [95%CI = 1.08–1.28] greater odds [$p < 0.0001$] than Whites. Blacks had 0.76 [95%CI = 0.70–0.82] and Asians had 0.74 [95%CI = 0.61–0.90] lower odds of CAD than Whites [$p < 0.0001$ each]. **CONCLUSIONS:** Although there are similar findings between those having 1–2 and >2 drinks/day, we do not advise drinking above the dietary guidelines; other information does not support this action. We note existing literature supports a beneficial effect of having 1–2 drinks/day compared to <1 on stroke and CAD. Race/ethnicity is strongly associated with stroke and CAD.

PCV25

SMOKING AND STROKE IN THE CHINESE SMOKING POPULATION

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OBJECTIVES: Worldwide, the association of passive smoking with development of stroke has been ascertained. However, it remains unknown of the magnitude of the association in the Chinese population. We thus systematically reviewed the published studies worldwide. **METHODS:** We searched Medline, EMBASE, and three other Chinese databases from their inception to June, 2008. We included case-control and cohort studies that investigated the association of smoking with stroke, and that provided data on the magnitude of the association. Two reviewers screened the eligibility, assessed the extent of the bias, and extracted data independently. We obtained the unadjusted and adjusted estimates of studies. We pooled the trial data using the random-effect model and explored the heterogeneity by the pre-specified variables. **RESULTS:** We included 49 studies ($n = 58,872$), 8 of which were cohort studies ($n = 42,755$) and 41 case-control studies (cumulative cases 7 883, controls 9 590). Smoking increased the risk of stroke by 75% (OR 1.75, 95%CI 1.51 to 2.03). Pooling of adjusted estimates of 31 studies ($n = 26,028$) showed the risk of stroke was increased by 81% in smokers (1.81, 1.57 to 2.08). The magnitude of the association was not statistically different in different type of strokes: hemorrhagic stroke 1.65 (1.29 to 2.11) and ischemic stroke 1.79 (1.20 to 2.68). No dose-response relationship was found between amount of smoking and the risk of stroke. **CONCLUSIONS:** The increased risk of stroke associated with smoking in the Chinese population has been ascertained.

PCV26

HEALTH CARE UTILIZATION AND RISK OF CARDIOVASCULAR DISEASE ASSOCIATED WITH METABOLIC SYNDROME

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OBJECTIVES: To analyze the health care utilization and risk profiles of patients with metabolic syndrome (MS) based on subgroups identified by a latent class analysis. **METHODS:** Utilizing the medical record database from GE Healthcare, we estimate a set of regressions to take a closer look at the effect of metabolic syndrome (MS) on patients' hospital admission, office visit, and the risk of developing one particular type of cardiovascular disease, coronary heart disease (CHD). Patients are

identified as having MS by using the guidelines proposed by the National Cholesterol Education Program Adult Treatment Panel III. We conduct the analysis in this study in the following steps; first, we adopt negative binomial regression models to estimate the effect of MS on hospital admission and office visit; second, Probit models are applied to examine the relationship between MS and CHD; and third, the results from the Latent Class Analysis, which identifies five subgroups of MS patients by risk factors, are integrated into the regression estimations. **RESULTS:** We find 1) that patients with MS have higher number of hospital admissions and office visits, and are more likely to develop CHD than those without MS, and 2) that MS patients with abnormal blood pressure are more likely to be hospitalized than MS patients with normal blood pressure. Strikingly, we find, by integrating the results from a latent class analysis, that MS patients with the simultaneous presence of three risk factors, abnormal HDL, waist circumference, and blood pressure, are more likely to develop CHD than other types of MS patients. **CONCLUSIONS:** LCA offers a useful method to help better classify MS patients into sub groups by shared group-specific characteristics that would be hard to measure otherwise. Based on the LCA study, we confirm that MS patients with multiple risk factors are more likely to develop CHD conditions.

PCV27

THE PREDICTION OF STROKE AND MORTALITY OUTCOMES IN PATIENTS WITH ATRIAL FIBRILLATION MAINTAINING SINUS RHYTHM WITH AND WITHOUT ANTIARRHYTHMIC DRUGS

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Atrial fibrillation (AF) poses a substantial health burden. While analyses of the AFFIRM study showed that maintenance of sinus rhythm (SR) reduced the risk of stroke and death, due to their toxicity, antiarrhythmic drug (AAD) use was found to be independently associated with increased mortality. **OBJECTIVES:** To estimate the benefits of SR maintenance, in order to understand the potential improvements of maintaining SR with alternatives to AADs, such as ablation. **METHODS:** A discrete event simulation (DES) was developed predicting stroke and death in a population with AF using equations from AFFIRM. Individual patients were created and assigned unique attributes. Analyses were run over a ten year time horizon, wherein the AF burden (the time spent out of SR) was allowed to vary from 0 to 50%. Scenarios were evaluated wherein SR was attained with and without use of AADs. **RESULTS:** Under the assumption of perfect rhythm control, 17.1% of patients controlled with AADs were predicted to die, compared to only 12.8% of those controlled without AADs; 5.9% and 6.2% of these populations were predicted to have strokes, respectively. Strokes were higher in latter cohort because of improved survival. When the AF burden was increased to 25%, 19.5% and 14.6% were predicted to die, while 6.6% and 6.8% were predicted to have a stroke, respectively. A further increase of the AF burden to 50% resulted in predicted mortality of 22.1% and 16.7%, and stroke rates of 7.2% and 7.6%, respectively. **CONCLUSIONS:** Maintenance of SR improves survival in patients with AF, and without the use of AAD was predicted to yield a substantial incremental survival benefit. These results indicate that techniques like ablation, which have been shown to be more effective than AAD for converting and maintaining SR would have important benefits in an AF population.

PCV28

THE CLINICAL IMPACT OF DIFFERENCES BETWEEN TWO MEASURES OF THE INTERNATIONAL NORMALIZED RATIO (INR)

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OBJECTIVES: To assess the clinical impact of disagreement between two methods of measuring INR in our anticoagulation clinics. **METHODS:** We assessed paired INR samples collected from the same patient at the same visit from 4 anticoagulation clinics associated with the Johns Hopkins Medical Institutions. One venous sample was analyzed in the Johns Hopkins Coagulation Laboratory and one fingerstick sample was analyzed by the Hemochron® Signature Plus POC device (International Technidyne Corporation, Edison, NJ, USA). A newly-developed analytic technique was applied that reports results in explicitly clinical terms. **RESULTS:** Samples were collected from 1666 patients from January, 2006 through June, 2008. The lab was nearly twice as likely to report a value below the target INR range of 2–3 compared with the POC (36% vs. 19%). Furthermore, the lab was almost four times more likely to report that the INR was 1.0–1.49 – a range associated with a 13.5-fold increased risk of a thromboembolic event (18% vs. 5%). Overall, 29% of clinical decisions were projected to differ, depending on which measure was used. A majority (53%) of the predicted clinical differences occurred when the POC device reported a value within the target INR range. Based on epidemiologic evidence of risk as a function of the INR, we estimate that 67 thromboembolic events occurred over the 2.5 year period because of the discrepancy between the measures. **CONCLUSIONS:** There are clinically relevant differences between INR values reported by the Hemochron POC device and our clinical lab that were not detected by conventional methods. The Hemochron device biases INR measures toward the target range throughout the INR scale. This bias prevents many necessary warfarin dosing changes because the clinician does not understand the patient's true risk level. Therefore, patients spend more time at INR levels strongly associated with an increased risk of a negative outcome.